

Claims

1. A bispecific molecule comprising: a target cell specific ligand and an effector cell specific antibody.

5 2. A bispecific molecule of claim 1, wherein the ligand is an autocrine growth factor for a tumor cell.

10 3. A bispecific molecule of claim 2, wherein the tumor cell is a human small-cell lung carcinoma cell.

4. A bispecific molecule of claim 3, wherein the ligand binds to the gastrin-releasing peptide receptor.

15 5. A bispecific molecule of claim 4, wherein the ligand is selected from the group consisting of bombesin and gastrin-releasing peptide, or analogues thereof.

20 6. A bispecific molecule of claim 1, wherein the effector cell specific antibody binds the Fc receptor of an effector cell.

7. A bispecific molecule of claim 6, wherein the effector cell specific antibody binds the Fc γ receptor at a site that is not inhibited by endogenous immunoglobulin.

25 8. A bispecific molecule of claim 7, wherein the Fc γ receptor is selected from the group consisting of: Fc γ RI, Fc γ RII and Fc γ RIII.

30 9. A bispecific molecule of claim 8, wherein the effector cell specific antibody is selected from the group consisting of: mAb22, mAb32, mAb44, mAb62 and mAb197.

10. A bispecific molecule of claim 1, wherein the target cell specific ligand is bombesin or an analogue thereof and the effector cell specific antibody is a human Fc γ RI-specific monoclonal antibody.

35 11. A target cell-specific effector cell for inducing an antibody dependent effector cell-mediated cytotoxicity against a target cell comprising:

- (i) a target cell-specific ligand; and
- (ii) an effector cell-specific antibody that is bound to an effector cell.

12. A target cell-specific effector cell of claim 11, wherein the target cell is a tumor cell.

5 13. A target cell-specific effector cell of claim 12, wherein the tumor cell is a human small-cell lung carcinoma cell.

14. A target cell-specific effector cell of claim 13, wherein the target cell-specific ligand is an autocrine growth factor for the human small cell lung carcinoma cell.

10 15. A target cell-specific effector cell of claim 14, wherein the target cell-specific ligand is selected from the group consisting of bombesin and gastrin-releasing peptide, and analogues thereof.

15 16. A target cell-specific effector cell of claim 11, wherein the Fc receptor of the effector cell consisting of: FcγRI, FcγRII and FcγRIII.

20 17. A target cell-specific effector cell of claim 16, wherein the effector cell-specific antibody is selected from the group consisting of: mAb22, mAb32, mAb44, mAb62 and mAb197.

25 18. A method of inducing a specific antibody dependent effector cell-mediated cytotoxicity against a target cell, in a subject, comprising administering to the subject a bispecific molecule of claim 1, 6, 9 or 10 in a pharmaceutically acceptable medium.

19. A method of claim 18, wherein the a target cell is a tumor cell.

30 20. A method of claim 19, wherein the tumor cell is a human small-cell lung carcinoma cell.

21. A method for stimulating an immune response in a subject comprising administering to the subject a bispecific molecule specific ligand in a pharmaceutically acceptable carrier.

35 22. A method of claim 21 wherein the target cell specific ligand of the bifunctional molecule is an autocrine growth factor and the effector cell specific antibody is specific to an Fcγ receptor of an effector cell.

23. A method of claim 22 wherein the target cell specific ligand of the bifunctional molecule is selected from the group consisting of: insulin-like growth factor I, transferrin, vasoactive intestinal peptide, neurotensin, neuromedin B, neurophysin, tumor necrosis factor, transforming growth factor alpha, platelet derived growth factor, the transferin receptor and analogues thereof.

24. A method of claim 23 wherein the target cell specific ligand of the bifunctional molecule is selected from the group consisting of bombesin and gastrin releasing peptide or an analogue thereof.

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